U.S. Department of the Interior
Bureau of Land Management
Little Snake Field Office
455 Emerson Street
Craig, CO 81625-1129

ENVIRONMENTAL ASSESSMENT

EA-NUMBER: CO-100-2006-063 EA

PERMIT/LEASE NUMBER: COC 69881

PROJECT NAME: Big Elk Coal Exploration License

LEGAL DESCRIPTION: T. 5 N., R. 89 W., Secs. 9, 10, 11, 14, 15, 16, 21-28, 35, and 36

APPLICANT: Juniper Coal Co. (Peabody Energy Co. / Twentymile Coal Co.)

PLAN CONFORMANCE REVIEW: The proposed action is subject to the following plan:

Name of Plans: Little Snake Resource Management Plan and Record of Decision

Date(s) Approved: April 26, 1989

Results: The proposed action has been reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3). The proposed action is in conformance with the objectives for Management Unit 1.

Remarks: The proposed Big Elk Exploration License is located within Management Unit 1 (Little Snake Resource Management Plan). This unit is rated as possessing the highest favorability for the occurrence of coal, and oil and gas resources in the Little Snake Resource Area. The objectives of Management Unit 1 are to realize the potential for development of coal, oil, and gas resources.

NEED FOR PROPOSED ACTION: Juniper Coal Co. (JCC) requires more technical information regarding the scope and nature of the coal reserve in the Big Elk project area before making a financial decision to proceed with a coal lease-by-application.

PUBLIC SCOPING PROCESS: This project will be listed on the Little Snake Field Office's web site.

BACKGROUND: In 1996 JCC submitted an exploration license to drill on the Big Elk project and the Environmental Assessment (EA) number CO-016-96-100 was completed for that action.

In conjunction with this exploration license, JCC submitted a coal lease-by-application (LBA) serialized as COC 59432. An EA was completed for this LBA in 1998 and the LBA was approved in 1999. The exploration license and LBA were put into an inactive, suspended status in March, 1999. After a receiving a one year extension, in January, 2005 both the exploration license and LBA COC 59432 expired. Recent developments in coal market conditions and local ownership positions have prompted JCC to renew their interest in pursuing a Big Elk LBA.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

PROPOSED ACTION: JCC proposes to drill 33 coal exploration holes into federally controlled coal in an 8,000 acre area dominated by private surface ownership over a three year period from 2006 to 2008. Drilling is anticipated to occur primarily in the summer and fall seasons, however JCC proposes to reserve the option of drilling year-round, 24 hours per day. JCC will coordinate with the Colorado Dept. of Wildlife (CDOW) to preclude public access and avoid critical winter range. JCC would also coordinate with CDOW regarding minimizing impacts to grouse leks and active raptor nests.

Access is proposed to use existing Routt County roads, unimproved ranch roads and jeep trails. The attached drill hole location map shows JCC's intention of locating drill sites adjacent to existing access in order to minimize surface disturbance. Minor road maintenance may be required during operations. JCC proposes that there may be the situation where existing direct access to a drill site is not possible. Cross-country travel may be employed if possible, or a short spur road may need to be cut. JCC estimates in a worst-case situation that no more than 3,000 feet of road construction may be required. These temporary access ways will be constructed to a 14 foot width and designed in accordance with applicable regulations.

The drill pads will be 100 feet square with 18 inches topsoil salvaged and stockpiled. Runoff and sediment will be controlled by using a silt fence or berm down gradient from the stockpile. Mud pits for drilling fluids will be constructed within the pad area. Generally two or three pits are needed and their dimensions are approximately 10 by 5 by 6 feet deep. All excavated material will be stockpiled and erosion controlled for use as backfill during reclamation. All surface disturbances will be reclaimed to BLM standards.

NO ACTION ALTERNATIVE: This alternative would deny JCC authorization to drill 33 exploration holes used to better define the coal resource of the Big Elk project area. Lacking the information gained from this project could inhibit JCC from being able to make an informed decision regarding proceeding with a LBA action.

AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES/MITIGATION MEASURES

CRITICAL RESOURCES

AIR QUALITY

Affected Environment: Regional Air Quality will not be affected by either of the alternatives.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/28/06

AREA OF CRITICAL ENVIRONMENTAL CONCERN

Affected Environment: Not present.

Environmental Consequences: Not applicable.

Mitigative Measures: Not applicable

Name of specialist and date: Jim McBrayer – 7/7/2006

CULTURAL RESOURCES

Affected Environment: Cultural resources, in this region of Colorado, range from late Paleo-Indian to Historic. For a general understanding of the cultural resources in this area of Colorado, see ***An Overview of Prehistoric Cultural Resources, Little Snake Resource Area, Northwestern Colorado***, Bureau of Land Management Colorado, Cultural Resources Series, Number 20, ***An Isolated Empire, A History of Northwestern Colorado***, Bureau of Land Management Colorado, Cultural Resource Series, Number 2 and ***Colorado Prehistory: A Context for the Northern Colorado River Basin,*** Colorado Council of Professional Archaeologists.

Environmental Consequences: The proposed action has undergone a Class III cultural resource survey:

McDonald, Kae.
2006 Juniper Coal Company, One Proposed Core Hole, A Class III Cultural Resource Inventory, Routt County, Colorado. BLM 54.16.06. Metcalf Archaeological Consultants Inc., Eagle, Colorado.

The survey identified no eligible to the National Register of Historic Places prehistoric

cultural resources. The proposed project may proceed as described in this EA with the following mitigative measures in place.

Mitigative Measures:

The following standard stipulations apply for this project:

1. The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the authorized officer (AO) at (970) 826-5000. Within five working days, the AO will inform the operator as to:

- Whether the materials appear eligible for the National Register of Historic Places;
- The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again; and
- Pursuant to 43 CFR 10.4(g) (Federal Register Notice, Monday, December 4, 1995, Vol. 60, No. 232) the holder of this authorization must notify the AO, by telephone at (970) 826-5000, and with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony.
- Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

Name of specialist and date: Gary D. Collins June 27, 2006

ENVIRONMENTAL JUSTICE

Affected Environment: The project would not directly affect the social, cultural, or economic well being and health of Native American, minority or low-income populations. The project area is relatively isolated from population centers, so no populations would be affected by physical or socioeconomic impacts from the project.

Environmental Consequences: None.

Mitigative Measures: None.

Name of Specialist and Date: Louise McMinn, Realty Specialist 04/26/2006

FLOOD PLAINS

Affected Environment: The following Management Action from the Little Snake Resource Management Plan, Record of Decision (1989) was included in the analysis of the Proposed Action. Construction will be allowed within or near intermittent drainages and their floodplains only after completing a case-by-case analysis of soil type and slope steepness of the drainage. Compliance with Executive Order 11988 will be ensured. These actions will not preclude road crossings built to BLM specifications.

The proposed coal exploration activity will primarily occur along ridgelines and gentle hillslopes. Most drill pads that are located in valley bottoms are within headwater areas with ephemeral flow patterns and little to no stream channel and floodplain development (BLM 001, BLM 004, BLM 009, BLM 014 and BLM 019). The remaining drill pads that are within valley bottoms have intermittent surface flow patterns although perennial to intermittent seeps and springs are present; drill pads associated with BLM 022 in upper Berry Gulch and BLM 033 in an unnamed tributary of Dill Gulch are in these valley bottom types and are staked outside of the small active floodplain area. All of the valley bottoms have a very good cover of upland vegetation throughout and downstream of the proposed drill pads, except for those in upper Berry Gulch (BLM 009 and BLM 022) or with regards to BLM 022 and BLM 033 has small lentic riparian systems in addition.

Environmental Consequences: No road construction is proposed to occur within valley bottoms containing intermittent drainages. The small disturbances associated with the exploration drill pads will be outside of any established floodplain areas. Some sediment could be carried off the disturbed drill pads after operations are completed and before the vegetation has a chance to become reestablished from seed or root stock in topsoil. Additional mitigation as proposed by Juniper Coal Company on these drill pads will lesson the potential for any excessive sediment to be deposited in floodplain areas. No degradation to intermittent drainages would be expected from the proposed activities.

No threat to human safety, life, welfare and property will result from the coal exploration project and implementing the proposed action.

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/28/06

INVASIVE, NONNATIVE SPECIES

Affected Environment: Houndstongue, Whitetop, Canada thistle, and other biennial thistles are known to occur in this area. There is the potential for noxious weeds, such as dalmatian toadflax, knapweeds, and others, to exist and spread in these areas.

Environmental Consequences: The surface disturbing activities and associated traffic involved with drilling new exploration holes and constructing and upgrading the access roads will create a favorable environment, and provide a mode of transport, for invasive

species and other noxious weeds to become established. Invasive species can be spread through a variety of means including vehicular travel, wind, water, and wildlife and livestock movement. The utilization of interim reclamation techniques would facilitate control of invasive species and reduce the potential of long term infestation of annual and noxious weed species. All principles of Integrated Pest Management should be employed to control noxious weeds on public lands.

Mitigative Measures: None

Name of specialist and date: Curtis Bryan 5/2/06

MIGRATORY BIRDS

Affected Environment: The proposed project area contains suitable nesting habitat for golden eagle, sage sparrow, and Brewers sparrow. These three species are listed on the U.S. Fish and Wildlife Services Birds of Conservation Concern list. There are no known golden eagle nests within ¼ mile of any drill site.

Environmental Consequences: Construction and drilling activities might have a negative impact on nesting golden eagles. Disturbances from these activities might cause eagles to avoid the project area prior to nesting. If conducted during the nesting season, they might result in nest abandonment. If conducted outside of the nesting season, golden eagles are not likely to be impacted. Potential for take of golden eagles is low.

Brewers sparrows and sage sparrows are likely to be nesting throughout the project area. Construction activities may result in nest destruction if conducted during these birds nesting season. Seasonal limitations on surface disturbing activities for Columbian sharp-tailed grouse minimize the potential for this to occur over much of the project area. If construction activities occur outside of their nesting period, these birds would not be affected. The potential for take of Brewers sparrows and sage sparrows is low.

Mitigative Measures: None

Name of specialist and date: Timothy Novotny 6/1/06

NATIVE AMERICAN RELIGIOUS CONCERNS

A letter was sent to the Uinta and Ouray Tribal Council, Southern Ute Tribal Council, Ute Mountain Ute Tribal Council, and the Colorado Commission of Indian Affairs on January 21, 1999. The letter listed the projects that the BLM would notify them on and projects that would not require notification. No comments were received (Letter on file at the Little Snake Field Office). This project requires no additional notification.

Name of specialist and date: Gary D. Collins June 27, 2006

PRIME & UNIQUE FARMLANDS

Affected Environment: Not Present

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/2/06

T&E SPECIES - SENSITIVE PLANTS

Affected Environment: There are no BLM sensitive plant species within or in the vicinity of the Proposed Action.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Hunter Seim 5/1/06

T&E SPECIES – ANIMALS

Affected Environment: There are no threatened or endangered species in the project area. Drill sites 1, 3-6, 10, 11, 13, 14, 17, 18, 20, 21, 26, 28, 31-33 are within two miles of a Columbian sharp-tailed grouse lek. Columbian sharp-tailed grouse are a BLM special status species. None of the drill sites are within a quarter mile of these leks.

Environmental Consequences: Drilling activities could have a negative impact on nesting sharp-tailed grouse if conducted during the nesting season. Negative impacts might include but are not limited to nest destruction, nest abandonment, reduced lek attendance. In order to ensure that nesting grouse are not disturbed by these activities, construction and drilling of these wells should not be conducted between March 1 and June 30.

Mitigative Measures: CO-30 No surface disturbing activities between March 1 and June 30 in order to protect nesting sharp-tailed grouse. Applicable to wells 1, 3-6, 10, 11, 13, 14, 17, 18, 20, 21, 26, 28, and 31-33.

Name of specialist and date: Timothy Novotny 6/1/06

T&E SPECIES – PLANTS

Affected Environment: There are no federally listed threatened or endangered plant species within or in the vicinity of the Proposed Action.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Hunter Seim 5/1/06

WASTES, HAZARDOUS OR SOLID

Affected Environment: If the release does occur, the environment affected would be dependent on the nature and volume of material released. If there are no releases, there will be no environmental impact.

Environmental Consequences: Consequences will be dependent on the volume and nature of the material released. In most every situation involving hazardous materials, there are ways to remediate the area that has been contaminated. Short-term consequences will occur, but they can be remedied, and long-term impacts will be minimal.

Mitigative Measures: None

Name of specialist and date: D. Johnson 5/1/06

WATER QUALITY - GROUND

Affected Environment: The 33 coal exploration drill holes will penetrate the Williams Fork Formation down through the Wolf Creek coal seam. The wells will not penetrate the Trout Creek Sandstone. Ground water occurrence within the project area is generally limited to the Trout Creek and Twentymile Sandstone members of the Williams Fork Formation. Shallow alluvial/colluvial aquifers associated with some of the larger drainage areas may also occur. Localized groundwater occurrences are also associated with laterally discontinuous, very fine to fine grained sandstone, siltstones, and coal beds, which typically have low storability and are characterized by variable water yields. Ground water recharge occurs in the uplands of the Williams Fork Mountains in the southern and eastern portions of the project area and along the axis of the Sage Creek Anticline. Ground water movement is generally downdip to the north-northeast.

Environmental Consequences: The proposed exploration activities will avoid area drainage channels, and so will not affect alluvial/colluvial aquifers. Since the proposed exploration drilling will not extend into the Trout Creek Sandstone, it will not be affected, and the only bedrock aquifer that will be penetrated will be the Twentymile Sandstone. The proposed plugging programs will protect/isolate this aquifer and prevent commingling of water from different horizons. Any exploration holes converted to groundwater monitoring wells or water supply wells will have completion operations submitted to the BLM for approval. Groundwater has been addressed in the existing environmental documents for the existing exploration operations. With proper drilling and plugging practices and by following the mitigation address in the coal exploration license application and environmental documents, there should be no significant environmental consequences to groundwater.

Mitigative Measures: None

Name of specialist and date: Fred Conrath 05/08/06

WATER QUALITY - SURFACE

Affected Environment: The following Management Action from the Little Snake Resource Management Plan, Record of Decision (1989) was included in the analysis of the Proposed Action. "No-surface-occupancy stipulations will be established from within 500 feet to 1/4 mile of perennial water sources depending on the type of source, use of source, soil type and slope steepness."

The proposed coal exploration project is located primarily in areas with surface drainage that would flow towards headwater tributaries of Dry Creek, the Williams Fork River and the East Fork Williams Fork River. The main tributaries to Dry Creek in the project area include Temple Gulch and Dill Gulch. Dry Creek is a perennial tributary to the Upper Yampa River (above the confluence with Elkhead Creek). The East Fork is a perennial tributary to the Williams Fork River and the Williams Fork River is a perennial tributary to the Yampa River (below the confluence with Elkhead Creek). Headwater tributaries to Hayden Gulch and Dunstan Gulch, which are tributary to the East Fork Williams Fork River are within the affected environment of the proposed coal exploration project; these headwater stream drainages are ephemeral to intermittent. Berry Gulch, which has perennial flow in the lower stream segments is the only tributary to the Williams Fork River that is directly affected by the proposed action. In the area affected by the proposed drill pad locations Berry Gulch has ephemeral (BLM 009) to intermittent surface flow patterns with the presence of intermittent to perennial seeps (BLM022).

The water quality of the Upper Yampa River receiving tributary water from Dry Creek as well as the Lower Yampa River receiving tributary water from the Williams Fork River needs to support Aquatic Life Cold 1, Recreation 1a, Water Supply and Agriculture; the East Fork Williams Fork River has the same water quality requirements. The Williams Fork River needs to have water quality that can support Aquatic Life Cold 2, Recreation 1a, Water Supply and Agriculture; this stream segment is designated as Use Protected. Dry Creek, including all tributaries and wetlands needs to have water quality that can support Aquatic Life Warm 2, Recreation 1a, and Agriculture; these stream segments are designated as Use Protected.

Other tributary waters to the Upper Yampa River, including all wetlands need to have water quality that can support Aquatic Life Cold 2, Recreation 2, and Agriculture; these tributary streams are designated as Use Protected.

Environmental Consequences: Dry Creek is the only stream segment within the affected environment that is currently listed as having impaired water quality. It is listed for selenium and the stream portion that is affected is downstream below the Seneca Mine. It is presently being monitored by Seneca Mine and it is a low priority for Total Maximum Daily Load analysis. The proposed coal exploration project will only involve minor surface

disturbances within the landscape. The amount of soil disturbed within the landscape coupled with the vegetated ephemeral and intermittent draws would not be expected to have any measurable effect on water quality for any of the affected stream segments or their beneficial uses.

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/28/06

WETLANDS/RIPARIAN ZONES

Affected Environment: Small wetland areas that occur on private surface and that are present in close proximity to exploration activity associated with BLM 022 and BLM 033 occur in upper Berry Gulch and in an unnamed tributary gulch to the east of Dill Gulch. The drill pad associated with BLM 022 is located in a narrow valley as far away as practical to the stream drainage and below the steep hillslopes. A narrow lentic riparian system found in the stream drainage begins a short distance upstream from the proposed drill pad and this system becomes entrenched in a very short distance. On the opposite hillslopes farther away from the proposed drill pad some drier seeps are present with some minor slumping occurring. Cattle grazing in the valley bottom and trampling within the riparian systems were evident; a small stock water pond was present a couple of hundred feet below this area.

A narrower linear lentic system is present in the valley bottom in the unnamed tributary to Dill Gulch where the drill pad associated with BLM 033 is proposed. An existing road crosses the valley bottom with an installed culvert downstream of the proposed drill pad. A small fairly stable headcut is present a short distance upstream of the culvert and below the headcut the riparian system is entrenched, narrower and wetter.

Environmental Consequences: Riparian systems will be avoided by all surface disturbing activities associated with the proposed coal exploration project. The small areas that will be disturbed to construct the proposed drill pad locations which would be sited upslope and a short distance from the riparian systems could be a source of some sediment that may be deposited or flow through the riparian system. The mitigation proposed to reduce the sediment carried off-site during the active drilling phase followed by the site stabilization mitigation would reduce any sediment to an acceptable level. The small amount of sediment that could be deposited would not have any detrimental effect and could result in a slight benefit to the entrenched areas of the riparian systems present. The small amount of sediment that could enter the riparian areas from pad construction, drilling operations and the interim period until satisfactory reclamation is achieved could be stabilized in-place by the riparian vegetation that is present.

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/28/06

WILD & SCENIC RIVERS

Affected Environment: Not present.

Environmental Consequences: Not applicable.

Mitigative Measures: Not applicable

Name of specialist and date: Jim McBrayer – 4/26/2006

WILD & SCENIC RIVERS, WILDERNESS, WSAs

Affected Environment: Not present.

Environmental Consequences: Not applicable.

Mitigative Measures: Not applicable

Name of specialist and date: Jim McBrayer – 4/26/2006

NON-CRITICAL ELEMENTS

FLUID MINERALS

Affected Environment: The proposed action is in favorability zone 4 (highest for oil and gas potential). The proposed coal exploration holes will penetrate the Lewis and Williams Fork Formations. The area has some historic drilling and leasing activity. Future leasing and drilling will occur in this area and the oil and gas targets will likely be in formations deeper than the Williams Fork Formation.

Environmental Consequences: Future leasing and drilling will occur in this area subject to the NSO stipulation (Stip. Code: CO-1) for the oil and gas leases allowed within the area of federally leased coal lands. This stipulation can be waived without a plan amendment when certain conditions are met. The stipulation is described in detail in the Oil and Gas Leasing EIS ROD, October 1991.

Mitigative Measures: None

Name of specialist and date: Fred Conrath 05/08/2006

HYDROLOGY - GROUND

Affected Environment: The 33 coal exploration drill holes will penetrate the Williams Fork Formation down through the Wolf Creek coal seam. The drill holes will not penetrate the Trout Creek Sandstone. Ground water occurrence within the project area is generally limited to the Trout Creek and Twentymile Sandstone members of the Williams Fork Formation. Shallow alluvial/colluvial aquifers associated with some of the larger drainage areas may also occur. Localized groundwater occurrences are also associated with laterally discontinuous, very fine to fine grained sandstone, siltstones, and coal beds, which typically have low storability and are characterized by variable water yields. Ground water recharge occurs in the uplands of the Williams Fork Mountains in the southern and eastern portions of the project area and along the axis of the Sage Creek Anticline. Ground water movement is generally downdip to the north-northeast.

Environmental Consequences: The proposed exploration activities will avoid area drainage channels, and so will not affect alluvial/colluvial aquifers. Since the proposed exploration drilling will not extend into the Trout Creek Sandstone, it will not be affected, and the only bedrock aquifer that will be penetrated will be the Twentymile Sandstone. The proposed plugging programs will protect/isolate this aquifer and prevent commingling of water from different horizons. Any exploration holes converted to groundwater monitoring wells or water supply wells will have completion operations submitted to the BLM for approval. Groundwater has been addressed in the existing environmental documents for the existing exploration operations. With proper drilling and plugging practices and by following the mitigation address in the coal exploration license application and environmental documents, there should be no significant environmental consequences to groundwater.

Mitigative Measures: None

Name of specialist and date: Fred Conrath 05/08/06

PALEONTOLOGY

Affected Environment: The geologic formation at the surface is the Cretaceous age Williams Fork Formation, a member of the Mesa Verde Group (Kw) . This has been classified a Class Ia formation for the potential for occurrence of scientifically significant fossils.

Environmental Consequences: Scientifically significant fossils are found abundantly within this formation (Armstrong & Wolney, 1989). The potential for discovery of significant fossils on this location is considered to be high. If any such fossils are located here, construction activities could damage the fossils and the information that could have been gained from them would be lost. The significance of this impact would depend upon the significance of the fossil. The proposed action could also constitute a beneficial impact to paleontological resources by increasing the chances for discovery of scientifically significant fossils.

_____ The terrain is such that outcrops are exposed (eg. Badlands), therefore, a surface survey for paleontological resources will be required prior to surface disturbance.

_____ The majority of the terrain is covered with developed soils and vegetation. Therefore, a surface survey for paleontological resources will not be required.

__X__ The proposed action constitutes limited surface disturbance so as to make discovery of fossils by surface survey unlikely.

Mitigative Measures: Ceasing operations and notifying the Field Office Manager immediately upon discovery of a fossil during construction activities can effectively mitigate this impact. An assessment of the significance is made and a plan to retrieve the fossil or the information from the fossil is developed.

The majority of the terrain is covered with developed recent soils and vegetation. Therefore, a surface survey for paleontological resources will not be required.

Standard Discovery Stipulation

"If cultural or paleontological resources are discovered during exploration operations under this license, the licensee shall immediately notify the Field Office Manager and shall not disturb such discovered resources until the Field Office Manager issues specific instructions.

a. Within 5 working days after notification, the Field Office Manager shall evaluate any cultural resources discovered and shall determine whether any action may be required to protect or to preserve such discoveries.

b. The cost of data recovery for cultural resources discovered during exploration operations shall be borne by the licensee, if the licensee is ordered to take any protective measures. Ownership of cultural resources discovered shall be determined in accordance with applicable law."

References

Armstrong, Harley J. and Wolney, David G., 1989, Paleontological Resources of Northwest Colorado: A Regional Analysis, Museum of Western Colorado, Grand Junction, CO, prepared for Bur. Land Management, Vol. I of V.

Miller, A.E., 1977, Geology of Moffat County, Colorado, Colo. Geol. Surv. Map Series 3, 1:126,720.

Name of specialist and date: Robert Ernst 12 April 2006

SOILS

Affected Environment: Soils in the affected environment are derived from sandstones and shales. Sites that are proposed to be used for coal exploration activities are vegetated with native plant communities.

Environmental Consequences: Topsoil will be salvaged to the appropriate depth, stockpiled and separated from subsoils. Topsoil will also be redistributed back onto the drill pad within a relatively short period following the drill operations. Native rootstock, seed and microbes could likely survive through the stockpiled topsoil phase and remain viable when the topsoil is redistributed onto the disturbed sites. These reclamation techniques will help to facilitate revegetation of the disturbed sites which should be accomplished within a few years under the favorable climatic regime in this area.

Mitigative Measures: None

Name of specialist and date: Ole Olsen 6/28/06

VEGETATION

Affected Environment: The proposed action is located in sagebrush-grass and mountain shrub communities. Dominant plants in this community include Gambel oak (*Quercus gambelii*), Wyoming big sagebrush (*Artemesia tridentata wyomingensis*), serviceberry (*Amelanchier alnifolia*), snowberry (*Symphocarpus* albus), thickspike wheatgrass (*Agropyron dasystachyum*), western wheatgrass (*A. smithii*), and prairie junegrass (*Koeleria pyramidata*).

Environmental Consequences: The Proposed Action would remove no more than 2 total acres of vegetation for drill pad construction and road enhancements. The total disturbance caused by road improvements and well pad construction is minimal, and would not jeopardize the greater herbaceous community, as long as appropriate weed management practices are employed. Appropriate weed management practices are critical to the integrity of the surrounding plant community.

Mitigative Measures: None

Name of specialist and date: Curtis Bryan 5/2/06

VISUAL RESOURCES

Affected Environment: Visual Resource Management (VRM) classifications for the proposed project area include: Class III (moderate levels of landscape change allowed); Class IV (major modification of landscape change allowed)

Environmental Consequences: The proposed action will not impact existing VRM classifications.

Mitigative Measures: None

Name of specialist and date: Jim McBrayer – 4/26/2006

WILDLIFE, AQUATIC

Affected Environment: There is no aquatic wildlife habitat present in or near the proposed project area.

Environmental Consequences: None

Mitigative Measures: None

Name of specialist and date: Timothy Novotny 6/1/06

WILDLIFE, TERRESTRIAL

Affected Environment: The proposed project area provides year round habitat for pronghorn antelope, mule deer and elk including severe winter range for elk. Drill sites 1, 3-6, 8, 10, 11, 13, 18, 20, 21, 23, 27, 28, 31 and 33 are within elk severe winter range. The project area also provides habitat for a variety of small mammals, birds and reptiles.

Environmental Consequences: Big game animals will likely be displaced from the project area during construction and drilling operations. Surrounding habitat should be capable of supporting displaced big game animals during these activities. The exception to this would be elk on severe winter range. Displacing elk during critical winter periods could have a negative impact on individuals because they would be displace into habitat that is less capable of supporting elk during hard winters. Pad construction and well drilling of the wells listed above could have a negative impact on wintering elk if conducted between December 1 and April 30.

Most small mammals, birds and reptiles will be able to move out of the way of construction equipment and would be capable of avoiding the project area during drilling activities. These animals would be able to use the project area once drilling activities have been completed. The exceptions would be burrowing mammals which hide in burrows and nesting birds. In these cases, animals or and nests might be destroyed by construction equipment. This would be a negative impact to individual animals but would not have an impact on species health within the project area.

Mitigative Measures: CO-9 No surface disturbing activities between December 1 and April 30 in order to protect elk wintering on critical winter range. Applicable to wells 1, 3-6, 8, 10, 11, 13, 18, 20, 21, 23, 27, 28, 31 and 33

Name of specialist and date: Timothy Novotny 6/1/06

OTHER NON-CRITICAL ELEMENTS: For the following elements, those brought forward for analysis will be formatted as shown above.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Fluid Minerals			See Fluid Minerals
Forest Management		DJ 5/1/06	
Hydrology - Ground			See Hydrology-Ground
Hydrology - Surface		OO (addressed in Floodplain, WQ, and Riparian) 6/8/06	
Paleontology			See Paleontology
Range Management		CB 5/2/06	
Realty Authorizations		LM 4/26/2006	
Recreation/Travel Mgmt		RS 5/1/06	
Socio-Economics		LM 4/26/2006	
Solid Minerals		RE 4/11/2006	
Visual Resources			See Visual Resources
Wild Horse& Burro Mgmt	DJ 5/1/06		

CUMULATIVE IMPACTS SUMMARY:

STANDARDS

PLANT AND ANIMAL COMMUNITY (animal) STANDARD:

The proposed project area provides valuable habitat for a variety of wildlife species including big game, small mammals, birds and reptiles. The area is currently capable of supporting healthy, productive populations. Construction and drilling activities will temporarily make portions of the project area unusable by most wildlife. Once drilling activities are completed and rehabilitation is complete. The area will again provide productive habitat for wildlife. This standard is currently being met and will be met in the future.

Name of specialist and date: Timothy Novotny 6/1/06

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (animal) STANDARD:

There are no threatened or endangered species or habitat for such species present in or near the proposed project area. The project area does provide nesting and brood rearing habitat for Columbian sharp-tailed grouse, a BLM special status species. As mitigated, there are not likely to be any short-term or long term negative impacts to Columbian sharp-tailed grouse resulting from the proposed project. This standard is currently being met and will continue to be met in the future.

Name of specialist and date: Timothy Novotny 6/01/06

PLANT AND ANIMAL COMMUNITY (plant) STANDARD:

The plant communities impacted by the Proposed Action are currently meeting this standard. Plant diversity, vigor, abundance, and reproductive capability are currently at levels that ensure resilience in the plant community to human activities. Weeds must be addressed and all principles of invasive weed control should be employed. Given this mitigation measure, the Proposed Action would meet this standard. The No Action Alternative would also meet this standard because the disturbances would not occur.

Name of specialist and date: Curtis Bryan, 5/2/06

SPECIAL STATUS, THREATENED AND ENDANGERED SPECIES (plant) STANDARD:

There are no federally listed threatened or endangered or BLM sensitive plant species within or in the vicinity of the Proposed Action. This standard does not apply.

Name of specialist and date: Hunter Seim 5/1/06

RIPARIAN SYSTEMS STANDARD: The proposed action will meet the riparian standard for healthy rangelands. No riparian system occurs on the public land tract where exploration activity is proposed. Riparian systems that are present on private surface will be avoided by direct surface disturbing activity. Small amounts of sediment that may reach the lentic riparian systems that are present downstream would not cause any degradation to these systems.

Name of specialist and date: Ole Olsen 6/28/06

WATER QUALITY STANDARD: The proposed action will meet the water quality standard for healthy rangelands. Non-point source sediment contributions that could flow through the ephemeral and intermittent stream valleys will likely only be transported short distances and settle out within the well vegetated valley floors. On the few locations that are closer to perennial water sources (BLM022 and BLM031) drainage control measures will be implemented. Sediment and salts that

could be carried off the small disturbances associated with the coal exploration program within the Dry Creek drainage basin are not expected to cause any additional impairment to Dry Creek. The other stream segments that could potentially receive runoff water from the proposed action are presently supporting classified beneficial uses.

Name of specialist and date: Ole Olsen 6/28/06

UPLAND SOILS STANDARD: The proposed action will not meet the upland soil standard for healthy rangelands in the short term. This will be due to the surface disturbing action of removing vegetative cover and stripping topsoil. However, these actions are necessary for conducting operations and reducing the time to achieve successful reclamation and revegetation of the sites. After topsoil is redistributed and vegetative cover is reestablished these sites would be expected to regain the soil attributes and soil properties required of healthy upland soils.

Name of specialist and date: Ole Olsen 6/28/06

PERSONS/AGENCIES CONSULTED: Uintah and Ouray Tribal Council, Colorado Native American Commission, Colorado State Historic Preservation Office.

FONSI

The environmental assessment, analyzing the environmental effects of the proposed action, has been reviewed. With the implementation of the attached mitigation measures there is a finding of no significant impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

1. Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests or the locality. The physical and biological effects are limited to the Little Snake Resource Area and adjacent land.

2. Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.

3. There would be no adverse impacts to regional or local air quality, prime or unique farmlands, known paleontological resources on public land within the area, wetlands, floodplain, areas with unique characteristics, ecologically critical areas or designated Areas of Critical Environmental Concern.

4. There are no highly controversial effects on the environment.

5. There are no effects that are highly uncertain or involve unique or unknown risk. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.

6. This alternative does not set a precedent for other actions that may be implemented in the future to meet the goals and objectives of adopted Federal, State or local natural resource related plans, policies or programs.

7. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.

8. Based on previous and ongoing cultural surveys, and through mitigation by avoidance, no adverse impacts to cultural resources were identified or anticipated. There are no known American Indian religious concerns or persons or groups who might be disproportionately and adversely affected as anticipated by the Environmental Justice Policy.

9. No adverse impacts to any threatened or endangered species or their habitat that was determined to be critical under the Endangered Species Act were identified. If, at a future time, there could be the potential for adverse impacts, treatments would be modified or mitigated not to have an adverse effect or new analysis would be conducted.

10. This alternative is in compliance with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

DECISION AND RATIONALE: I have reviewed this environmental assessment including the explanation and resolution of any potentially significant environmental impacts. I have determined that the proposed action with the mitigation measures described below will not have any significant impacts on the human environment and that an EIS is not required. I have determined that the proposed project is in conformance with the approved land use plan. It is my decision to implement the project with the mitigation measures identified below.

Mitigation Measures/Remarks: See Special Stipulations listed on Attachment A.

It is my decision to implement the project with the mitigation measures identified below.

MITIGATION MEASURES:

See Special Stipulations listed on Attachment A.

COMPLIANCE PLAN(S):

The project will be inspected for compliance with the exploration plan and special stipulations during drilling operations and upon completion of operations.

MONITORING PLAN(S):

Abandonment inspections will be conducted during and upon completion of operations to determine if drill holes are properly plugged and disturbed areas reclaimed. Once the authorized officer has found the holes to be adequately plugged and reclamation has been carried-out, final abandonment approval will be granted by the authorized officer.

For drill holes converted to monitoring wells, inspections will be made to determine if the wells are properly completed, drill sites reclaimed, and access roads properly water-barred or otherwise maintained to minimize erosion.

SIGNATURE OF PREPARER:

DATE SIGNED:

SIGNATURE OF ENVIRONMENTAL REVIEWER:

DATE SIGNED:

SIGNATURE OF AUTHORIZED OFFICIAL:

DATE SIGNED:

ATTACHMENTS: Attachment A: Special Stipulations Item A: Drilling and Abandonment Information

ATTACHMENT A
SPECIAL STIPULATIONS

Juniper Coal Company Exploration License COC 69881,
Dated: June 28, 2006

1. The requirements for submission of geologic and abandonment information provided in Item A (attached) shall be followed.

2. The following standard cultural stipulations apply for this project:

1. The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the authorized officer (AO) at (970) 826-5000. Within five working days, the AO will inform the operator as to:

- Whether the materials appear eligible for the National Register of Historic Places;
- The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again; and
- Pursuant to 43 CFR 10.4(g) (Federal Register Notice, Monday, December 4, 1995, Vol. 60, No. 232) the holder of this authorization must notify the AO, by telephone at (970) 826-5000, and with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony.
- Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

3. If cultural or paleontological resources are discovered during exploration operations under this license, the licensee shall immediately notify the Field Office Manager and shall not disturb such discovered resources until the Field Office Manager issues specific instructions.

a. Within 5 working days after notification, the Field Office Manager shall evaluate any cultural resources discovered and shall determine whether any action may be required to protect or to preserve such discoveries.

b. The cost of data recovery for cultural resources discovered during exploration operations shall be borne by the licensee, if the licensee is ordered to take any protective measures. Ownership of cultural resources discovered shall be determined in accordance with applicable law

4. All waste material will be contained on site in a trash cage or other portable storage device and hauled to a county approved landfill. No hazardous materials/hazardous wastes or trash shall be disposed of on lands under this license. If a release does occur, it shall be reported to this office immediately.

5. All drill holes will be geophysically logged with natural gamma, density, resistivity, and caliper curves.

6. CO-30: No surface disturbing activities between March 1 and June 30 in order to protect nesting sharp-tailed grouse. Applicable to wells numbered 1, 3-6, 10, 11, 13, 14, 17, 18, 20, 21, 26, 28, and 31-33.

7. CO-9: No surface disturbing activities between December 1 and April 30 in order to protect elk wintering on critical winter range. Applicable to wells numbered 1, 3-6, 8, 10, 11, 13, 18, 20, 21, 23, 27, 28, 31 and 33.

8. Surface disturbing activities in wetland and riparian areas will be avoided.

9. Rutting will be mitigated according to surface owner agreements. In absence of a surface owner agreement specifying surface rutting, the following guidelines will be followed in order to minimize erosion resulting from ruts.

    a. Overland travel segments that traverse approximately perpendicular to the contour of the slope will not be used if surface rutting will exceed 2 inches.

    b. Two-track roads can be used if rutting depth remains below 3 inches. However, water bars to divert runoff water from the road tracks or other mitigative measures may need to be employed if ruts caused by the operations in excess of 2 inches remain after 30 days from the conclusion of operations in that area.

    c. Bladed or improved road segments that had topsoil salvaged prior to commencement of operations will not have a rutting depth restriction. However, maintenance, reclamation or other stabilization measures to control surface runoff and minimize soil erosion will be employed within 15 days.

10. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

11. Control of noxious weeds will be required through successful vegetation establishment and/or herbicide application. Applications of herbicide are prescribed, however, it is the responsibility of the lease operator to insure compliance with all local, state and federal laws and regulations, as well as labeling directions specific to the use of any given herbicide.

12. A Pesticide Use Proposal (PUP) will be approved prior to application of herbicides and/or other pesticides on Federal surface; contact the Little Snake Field Office to obtain a PUP form to request this authorization. Submit the PUP 2 months in advance of planned application. In the event you elect to apply herbicide or other pesticide as described and authorized on the approved PUP, you must report this use within 24 hours on Bureau of Land Management form titled Pesticide Application Record.

13. Crested wheatgrass in the proposed reclamation seed mix is not recommended. Paiute orchardgrass applied at a rate of 1.5-2.0 lbs/acre or another species preferred by the surface owner would be more suitable for the precipitation zone and the surrounding vegetation.

ITEM A

DRILLING AND ABANDONMENT INFORMATION REQUIRED
TO BE SUBMITTED TO THE LITTLE SNAKE FIELD OFFICE MANAGER

One copy of the following must be submitted within 30 days after each calendar year:

1. Lithologic and geophysical logs and any other required logs of strata penetrated and conditions encountered appropriately identified by hole number.

2. Analyses of coal and other pertinent tests appropriately identified by hole number. Identify types of tests that were run (proximate, ultimate, moisture-mineral-matter free basis, etc), if reported results were analyzed or calculated as composite or incremental samples.

3. Drill hole location map showing lease or license boundary, coal crop lines, drill hole numbers, and township, range and section lines and numbers.

4. List of drill hole numbers (proposed and final) and depths drilled.

An abandonment report must be submitted after the drill holes have been properly conditioned for abandonment or converted to monitoring wells. The report should contain the following:

1. For abandoned holes, describe or illustrate the method by which each hole was plugged and conditioned for final abandonment.

2. For holes converted to monitoring wells, describe or illustrate the well completion method (cementing, casing set, perforation interval, etc.), what aquifer(s) is being monitored, duration and frequency of monitoring, and types of tests planned (Ph, conductivity, pump, cation, etc.)

3. Status of reclamation of all disturbed areas.

4. List of drill hole numbers (proposed and final) and depths drilled under the license.